THE ADVISABILITY OF ELIMINATING THE TERMS MENIERE'S DISEASE AND MENIERE'S SYMPTOMS FROM OTOLOGIC NOMENCLATURE.*

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Meniere described the following case:[1] "A young girl during menstruation acquired a heavy cold while riding in the night on the imperial of a coach. She suddenly vomited, became dizzy, and deaf in both ears. On the fifth day she died. The autopsy revealed that no changes had taken place in the brain or in the spinal cord. The semicircular canals, however, were filled with a red, plastic, blood-like exudation, of which scarcely any traces were discovered in the vestibule and none of which was found in the cochlea." Ménière became convinced that the disease which he described did not emanate from the brain but from the ear. In a communication to the Academy he draws the following conclusions from his observations.[2]

1. A hearing organ hitherto entirely well can suddenly become the seat of functional disturbances consisting of various continuous or intermittent subjective noises with which, soon, a more or less great decrease of hearing is associated.
2. These functional disturbances are located in the inner ear and can cause attacks coming seemingly from the brain, namely, vertigo, feeling of being stunned, staggering gait, turning motion, and sudden collapse; furthermore, they are accompanied by nausea, vomiting, and syncope-like condition.
3. These attacks, which repeat themselves after free intervals, are invariably followed by a mostly grave diminution of hearing, and frequently the hearing is destroyed suddenly and completely.
4. All this leads to the supposition that the material cause of these functional disturbances is located in the semicircular canals.

The disease causing hardness of hearing, tinnitus and vertigo was named "Ménière's disease." Soon it was detected that hardness of hearing, tinnitus, and vertigo in various degrees were found in a number of instances for which the term "Ménière's disease" could not be employed, because the patients did not present the clinical entity described before, nor did the symptoms make it probable that the pathologic findings would correspond to those in Ménière's patient. In order to accommodate these cases in regard to the terminology the term Ménière's (complex of) symptoms was introduced. It did not take long for a discussion to arise as to the proper application of either term. That the abundance of observations suggested that even these two terms would not be sufficient to cover the whole group of diseases which were now recognized as representatives of an important array of afflictions led to further concessions in terminology. Ménière had entered a dark corner; he discovered and illuminated the entrance of a recess in medicine, so to speak; but the light of this one man was extinguished before he could discover the great extension and the many ramifications of the territory which are by no means all known to-day.

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The literature on the subject is voluminous. I quote only a few pertinent remarks.

Eitelberg[3] says: "And even in the apoplectic form it is not established with certainty that the pathologic conditions shown by Ménière must be the cause of the same, because the disease ends fatally only in extremely rare cases." . . . . "Besides, those attacks frequently pass by very quickly, whereas the resorption of an exudate must take a much longer time. Furthermore, one has repeatedly found that a catarrhal affection of the middle ear, with or without exudate, can be the cause of Ménière's symptoms, even if they appear suddenly. These symptoms have been observed to disappear as soon as the middle-ear catarrh had been improved or cured. In these cases we are more inclined to think of a momentary irritation of the acoustic nerve through increased labyrinthian pressure, or to think more of a reflex causation, than of an apoplectic exudate into the semicircular canals. It would be necessary also to eliminate these cases if we would be so very particular about the definition. In view of the fact, however, that Ménière himself was acquainted with the relation of the middle-ear affections and the symptoms mentioned before, we shall not pass judgment so severely on the definition of Ménière's disease and will allow it to stand even there where only the most important symptoms appear, namely, sudden and violent vertigo, with nausea and vomiting, after the other symptoms, namely, hardness of hearing and tinnitus, have already existed for some time."

I cannot agree with this view. Since Ménière's publication a variety of similar clinical pictures have been described and we are obliged to discriminate more correctly. We learn that affections of the labyrinth, with tinnitus, hardness of hearing, vertigo, etc., can be caused[4] "by anæmia, narrowing and embolism of the arteria auditiva interna or of the arteria basilaris (in consequence of compression by tumors or aneurisms or endarteritis chronica), by angioneurosis and free gas bubbles in the labyrinthian vessels in consequence of too rapid decompression in people working in caissons, and in divers. Furthermore, we find the symptoms mentioned before in hemorrhages caused by fractures of the temporal bone, in diseases of the cerebrum and its coverings, through changes in the walls of the bloodvessels (in syphilis, nephritis, leukæmia, diabetes mellitus, atheromatosis, heart lesions), and in middle-ear suppurations."

Alt[5] says that the local symptoms mentioned can be found also in infectious diseases. "In the latter the middle ear need not necessarily be affected. In rare cases hemorrhages can be caused by sudden increase of pressure in the outer ear canal. In an abortive form of cerebrospinal meningitis the inner ear can be affected, showing fever, headaches, vomiting, convulsions, etc., leaving behind them total deafness and staggering gait. Secondary inflammation of the labyrinth can lead to new formation of connective tissue. This tissue can take up salts or be transformed into bone. Concussion of the labyrinth may result in hardness of hearing and tinnitus."

Tuberculosis[6] of the labyrinth can cause deafness, tinnitus, and vertigo.

Whether similar disturbances occur in the status lymphaticus is not known to me. Theoretically, at least, they appear probable. Albert P. Ohlmacher[7] mentions conditions which are closely related to those in which disturbances of the inner ear have been found. He says: "Hypertrophy of the brain is mentioned by Rokitansky as one of the features of status lymphaticus, at times combined with cerebral œdema or with widening of the ventricles and increase of intracerebral fluid. In some of the recently studied cases one or more of these conditions are mentioned, and, in certain epileptics in the lymphatic state, general cerebral hypertrophy, localized hypertrophy, œdema, or hydrocephalus may appear." . . . "Again, one may find status lymphaticus associated with certain other diseases and their anatomical changes, as, for example, Basedow's disease, struma, scrofula, and pseudoleukæmia."

Dr. T. Wilson Parry[8] mentions that besides numerous general and special text-books he had before him two hundred and sixty papers referring to Ménière's symptoms. He defines three pathological conditions which should be considered:

1. An acute exudation or sudden hemorrhage into the labyrinth (a true Ménière's disease).
2. Chronic labyrinthian lesion not due to the above causes.
3. Secondary labyrinthian sources of irritation which are chiefly of tympanic origin.

He says: "If the one essential characteristic of true Ménière's disease not supervening on a previous disease be labyrinthian apoplexy then these are all undoubted cases of true Ménière's disease, for the microscope clearly reveals the perilymphatic space between the membranes and osseous semicircular canals completely filled up with an effusion of blood, some of which has been organized into newly formed bone."

"Excessive mechanical pressure thus induced acting upon the vestibular nerve endings produces an irritation which provokes the urgent consciousness of disordered equilibration. The symptoms of tinnitus (positive) and deafness (negative) are auditory phenomena, and are due to irritation and loss of function, respectively, of the cochlear branch of the auditory nerve. This "auditory" nerve travels to the nucleus accessorius, thence as auditory fibres along the striæ acusticæ, and, ascending in the lemniscus passes upward to the cerebrum without the intermediation of the cerebellum, to which the equilibrial fibres eventually find their way." Speaking of extralabyrinthian causes, Parry refers the effects of retracted and ankylosed ossicles to the spasmodic condition of the tensor tympani muscle or paralysis of the stapedius. He quotes a case described by Politzer in which a bony growth on the external labyrinthian wall had grown over the foramen ovale and was united to the stapes, producing symptoms of the true Ménière's disease.

The attacks caused by syringing the ear, by the pressure caused by cerumen and by thermal irritations, are well known.

The whole picture becomes complicated when we consider that the so-called Ménière's symptoms can be caused by an angioneurosis. Brunner[9] says: "There must be mentioned an observation by Scanzoni (transitory deafness with general irritation of the vessels and symptoms of urticaria after application of leeches to the vaginal region)." This must, perhaps, be taken as a reflex angiospasmus (or angioparalysis) of the labyrinthian vessels.

Brunner quotes a case of Politzer, classified as angioneurotic paralysis of the acusticus, in which galvanization of the sympathicus of the neck made the attacks of vertigo, marked hardness of hearing and tinnitus disappear.

Whether we have a condition before us which resembles somewhat the still questionable relation between the sympathicus and glaucoma I should like only to hint at.

Parry[10] relates a case in which the application of a seton had a very beneficial effect. He says: "The reasons that I have such full faith in the seton, after drugs have been found to be of no avail, are the following: . . . . I believe that it acts reflexly on the vasomotor system by means of the sympathetic, so as to cause constriction of the vessels in the vicinity of the lesion," etc. . . . .

Frankl-Hochwart, in his monograph (*Der Mênièresche Symptomen Complex; Die Erkrankungen des inneren Ohres*, Wien, 1898; Alfred Hoelder) gives a detailed classification of the kindred affections and mentions (page 30) pseudo-Ménière's attacks in hysteria, as epileptic aura, and in hemicrania.

In regard to vertigo, Wundt[11] says: "Vertigo can usually be created in two ways: first, through the disturbance of function of certain peripheral organs of sense, the impression of which causes the appearance of those sensations which create the perception of the static equilibrium of the body during rest and motion; and second, through central disturbances of function, which are apt to change in any manner whatsoever the normal relation between the impressions of our senses and the motions or perceptions of motions. With an organ of sense of the first variety we shall become acquainted in the ampullæ and in the semicircular canals of the labyrinth of the ear. Compared herewith the cerebrum seems to be that central organ of which the experimental or pathological changes cause, most frequently, objective or subjective symptoms of vertigo through central causes. On account of the close neighborhood of the labyrinth to this central organ it can be under stood that both forms of disturbance of equilibrium, the one caused peripherally and the other caused centrally through affections of the cerebellum, can frequently not easily be separated."

He further remarks:[12] "The disturbed function of a peripheral organ of sense or of a central region can produce sensations of vertigo only in that manner, that the normal co-ordination of the impressions of the senses to the movements of the body is injured in some manner. In fact, it can easily be seen that the creation of vertigo can always be referred to this general condition, when we find as its cause subjective or objective reasons. For this reason its occurrence in single instances can be caused in a manifold manner, centrally as well as peripherally. The inexperienced becomes dizzy when he walks on the ice. The uncertainty of vision, as it occurs in the amblyopic, or strabismic, or in a person with normal vision when he covers up one of his eyes, is not infrequently accompanied by dizziness. Still more plainly we see it occur in the walk of those in whom the degeneration of the posterior columns of the spinal cord dulls or abolishes the sensation of touch. The patient does not feel as he used to the existence of the ground, and he loses his equilibrium, he staggers and tries to save himself from falling down, by balancing with his arms."

The conclusions to be drawn from these observations are plain and correspond with the stand taken by E. P. Lyon,[13] who says: "Throughout my experimental work I have tried to adhere to the following rules:

"1. If stimulation of a sense organ or part of the nervous system calls forth a certain reaction (motion) it is certain that the stimulated organ is connected by nerves with the centre of this motion, but not that the stimulated organ itself is the centre.

"2. If through extirpation of an organ a function is eliminated it is certain that the extirpated organ is connected by nerves with the centre of this function, but not that it is itself the centre.

"3. If after extirpation of an organ an organic function which ordinarily is lost after this extirpation remains *in one case only* it is certain that the extirpated organ is not the sole centre of this function."

Landois[14] says: "Strange to say, we find sometimes in chronic affections of the stomach inclination to attacks of vertigo (Trousseau's stomach vertigo). It is, perhaps, created by an irritation of the nerves of the vessels of the labyrinth through an irritation of the nerves of the stomach. This would influence the pressure conditions of the endolymph. In an analogous manner an 'intestinal vertigo' (Leube), a 'larynx vertigo' (Charcot), and a 'urethral vertigo' (Erlenmeyer) have been described."

Wagenhaeuser[15] says: "We must mention under the head of vertigo caused by reflex the observations in which the symptoms showed themselves under the influence of strong or strictly identified sound impressions. Schmidekam mentions in this connection the strong tone of a sirene; Roosa, Ely, Jacobson, high tones; Bechterew ringing of bells and rolling of a carriage; v. Frankl-Hochwart the Tarnhelm motive in R. Wagner's "Götterdämmerung." Of interest is another patient of this author, who became violently dizzy during the Weber's test with the C-fork, and only when this fork was used. Ménière's symptoms caused by poison are repeatedly mentioned in the literature. Sapolini observed thirteen causes in which the symptoms appeared when a hair-dye with nitrate of silver was used and disappeared when the dye was discontinued; furthermore, Haug accuses mushrooms, Woakes, nicotine."

Alt (quoted by Wagenhaeuser) gives the anatomical basis for a case of morbus Ménièri in which a leukæmic infiltration of the acoustic nerve was found, whereas the middle ear and the labyrinth were intact.

Wagenhaeuser quotes Siebenmann's interesting findings in multiple spongification of the labyrinthian capsule: "The author (Siebenmann) calls attention to the close approach of extreme spongious spaces to the endosteum of the labyrinth, where the mighty lymph spaces of the newly formed spongiosa appear to be separated from the perilymph of the labyrinth only by thin membranes. Through these changes the pressure and density of the labyrinthian fluid could not only be subjected to an alteration in consequence of processes of diffusion, but some portions of the specimens proved clearly that the separating wall between the two lymph systems, which is now reduced to a membrane of connective tissue, can also be resorbed, whereby perforations develop with sudden changes in the intralabyrinthian pressure and intralabyrinthian position." Wagenhaeuser (*loc. cit.*) mentions that in the ear clinic in Tübingen as predisposing causes for morbus Ménièri are mentioned leukæmia, lues, and tabes, effects of great sunheat and mental overexertion.

Frankl-Hochwart[16] speaks of the labyrinth affections caused by toxic diseases. He mentions parotitis (Politzer), which very frequently is combined with scarlatina nephritis; he speaks of parotitis, typhus abdominalis and exanthematicus, variola, measles and influenza, cerebrospinal meningitis, quinine and salicylic acid, antipyrin, antifebrin (Haug), chloroform (Moos and Haug), chenopodium (North), atropine (Haug), hydrargyrum (Wolf), marsh gas, coal gas, illuminating gas.

O. Wolf,[17] speaking of deafness in consequence of lead poisoning (surditas saturnina), says that when the ear is affected, vertigo, tinnitus, and more or less rapid decrease of hearing appear. He quotes Tanquerel, who found in lead poisoning an induration of the ganglia of the neck, and Kussmaul and Meyer, who could demonstrate an increase and sclerosis of the connective tissue in the ganglion cœliacum in the autopsy of a man who died immediately after an attack of colic with severe enteric symptoms.

Frankl-Hochwart[18] mentions nephritis, pernicious anemia, morbus maculosus hemorrhagicus Werlhofii. While changes in the inner ear are rather rare in these affections, he mentions that nervous deafness is not infrequently found in leukæmia. Marasmus is also cited as one of the causes of affections of the inner ear. Atrophy of the labyrinth is described, as he says, by Voltolini, Toynbee, and Habermann.

Parry[19] mentions a case which in my mind forms the one extreme in the most varied conditions to which the term Ménière's disease has been applied. He says: "I have pleasure in being able to place before you a case of Ménière's disease, the new treatment of which, namely, hypnotic suggestion, has been entirely satisfactory. So far as I am aware, it is the first case in London treated in this way; and even in Paris, the home of hypnotism, one has not read of any cases that have been treated by this new method. The honor of recommending this treatment and carrying the case to a most successful issue is entirely due to Dr. A. Ernest Jones, of University College Hospital. The brilliant result, as will be seen from the full notes adjoined to this article, far exceeded our most sanguine expectation. The picture of the cure of a man of forty-four years, who had become prematurely old from constant worrying and depressing effects of eight years' unbearable tinnitus, vertigo, and vomiting is vivid enough without further comment."

Wagenhaeuser[20] says: "A look into the literature lets us recognize the lack of uniformity, the veritably confusing condition which is prevalent in this respect. The same 'Ménière's disease' which had been accepted for the disease described by Ménière was extended soon to all processes with symptoms of vertigo, tinnitus, and more or less outspoken hardness of hearing. . . ."

"Also Knapp, Politzer and others brought prominently forward the fact that two different conditions are united under this name, and they proposed to name only the suddenly appearing apoplectic-like deafness which shows itself with the characteristic symptoms 'Ménière's disease morbus Ménièri,' whereas the name 'Ménière's vertigo, Ménière's symptoms,' should be used for all other disturbances of hearing which are combined with subjective noises and vertigo. Again, others, following Brunner's proposition, abandon entirely the name 'Ménière's disease' and want to have used, only very generally, the term 'vertigo Ménière,' Ménière's complex of symptoms."

In a monograph[21] Brunner says: "One should speak of Ménière's symptoms only if the attacks of vertigo come spontaneously without external influences and if they come suddenly, mostly in repeated attacks, without fever, with more or less violent noises and rapid or only gradual appearance of hardness of hearing, and by and by one has become accustomed to speak of any vertigo with nausea and vomiting originating from the ear as Ménière's vertigo, Ménière's symptoms, and one has gradually admitted the same to be created—

"1. Through influences from the external and middle ear;
"2. Through diseases of the labyrinth;
"3. Through diseases of the brain and of the acoustic nerve; and
"4. Through neurosis, *e. g.*, of the sympathicus (angioneurosis)."

We do not speak nowadays of heart disease or of heart symptoms, of lung disease or of lung symptoms, nor of kidney disease or of kidney symptoms. We are expected to diagnose and name a recognizable affection of these organs more definitely, and if this is impossible, in some instances, we leave the question open with the understanding that further investigation is required to clear up some dark points. The same rule, I think, should be followed in otitis interna.

CONCLUSIONS. 1. The triad: Hardness of hearing, vertigo, and tinnitus is given as constituting the functional disturbance observed in the so-called Ménière's disease.

2. These symptoms occur also in numerous affections which are not based on the pathological finding as described by Ménière in his historical case.

3. The observation that not always a typical picture is present has led to the introduction of other terms, such as "Ménière's symptoms," etc., which has proved to be confusing.

4. Even affections of the middle ear, of the outer ear, or of other parts of the body can cause the symptoms described by Ménière.

5. These latter causes can be diagnosed in many instances and prove the existence of a great group of affections characterized by functional disturbances of the inner ear.

6. By abandoning the terms "Ménière's disease" and "Ménière's symptoms" a more definite nomenclature can be introduced. This is important not only from a physiological and pathological, but also from a clinical standpoint. By using, for instance, the terms "otitis interna syphilitica," or "leukemica," or "angioneurotica," or "gastrica" a clearer conception of some affections would ensue.

7. The various terms should be agreed upon. The many international medical meetings give ample opportunity for such a procedure.

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21. See reference 9, p. 281.